

## **TITLE: MEMS and Liquid Crystal based optical switch**

**Abstract-** The present invention is on Optical Switching using Liquid Crystal and MEMS Technology.

In "All Optical Networks", switching is done using micro-mirrors and liquid crystals. In one embodiment of the invention, the micro-mirrors are controlled using an electromagnetic control. In a slight variant of this invention the mirrors slide along certain points in a two dimensional matrix and do the switching. In yet another embodiment, the mirrors are mounted on a liquid crystal. Applying an external electric field deforms the liquid crystal. By changing the shape of the liquid crystal, change in directional orientation is brought and switching of the optical signal is done. In the final embodiment, switching is done by successive refraction and reflection of light through an electro-optic material as the refractive index is varied under an external electric field.

